

|   | Type | L # | Hits  | Search Text                                   | DBs                                      | Time Stamp          | Comments | Error Definition | Error Count |
|---|------|-----|-------|---|--|---------------------|----------|------------------|-------------|
| 1 | BRS  | L1  | 82    | bifidogenic                                   | USPAT;<br>US-PGPUB; EPO;<br>JPO; DERWENT | 2003/08/09<br>15:12 |          |                  | 0           |
| 2 | BRS  | L2  | 2     | bifidogenic same peptide                      | USPAT;<br>US-PGPUB; EPO;<br>JPO; DERWENT | 2003/08/09<br>15:12 |          |                  | 0           |
| 3 | BRS  | L3  | 316   | bifidobacterium adj bifidum                   | USPAT;<br>US-PGPUB; EPO;<br>JPO; DERWENT | 2003/08/09<br>15:12 |          |                  | 0           |
| 4 | BRS  | L4  | 4     | (bifidobacterium adj bifidum)<br>same peptide | USPAT;<br>US-PGPUB; EPO;<br>JPO; DERWENT | 2003/08/09<br>15:15 |          |                  | 0           |
| 5 | BRS  | L5  | 75602 | coli  | USPAT;<br>US-PGPUB; EPO;<br>JPO; DERWENT | 2003/08/09<br>15:16 |          |                  | 0           |
| 6 | BRS  | L6  | 0     | 4 same 5                                      | USPAT;<br>US-PGPUB; EPO;<br>JPO; DERWENT | 2003/08/09<br>15:16 |          |                  | 0           |
| 7 | BRS  | L7  | 2355  | milk same peptide                             | USPAT;<br>US-PGPUB; EPO;<br>JPO; DERWENT | 2003/08/09<br>15:16 |          |                  | 0           |
| 8 | BRS  | L8  | 2     | bifidogenic same (milk same<br>peptide)       | USPAT;<br>US-PGPUB; EPO;<br>JPO; DERWENT | 2003/08/09<br>15:17 |          |                  | 0           |

FILE 'MEDLINE' ENTERED AT 17:20:06 ON 09 AUG 2003

FILE 'CAPLUS' ENTERED AT 17:20:06 ON 09 AUG 2003  
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FILE 'BIOSIS' ENTERED AT 17:20:06 ON 09 AUG 2003  
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FILE 'SCISEARCH' ENTERED AT 17:20:06 ON 09 AUG 2003  
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FILE 'AGRICOLA' ENTERED AT 17:20:06 ON 09 AUG 2003

=> s bifidogenic  
L1 317 BIFIDOGENIC

=> s l1 (p) peptide  
L2 8 L1 (P) PEPTIDE

=> duplicate remove l2  
DUPLICATE PREFERENCE IS 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH'  
KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n  
PROCESSING COMPLETED FOR L2  
L3 3 DUPLICATE REMOVE L2 (5 DUPLICATES REMOVED)

=> d l3 1-3 ibib abs

L3 ANSWER 1 OF 3 MEDLINE on STN DUPLICATE 1  
ACCESSION NUMBER: 2002121041 MEDLINE  
DOCUMENT NUMBER: 21845950 PubMed ID: 11856332  
TITLE: Human milk provides peptides highly stimulating the growth  
of bifidobacteria.  
AUTHOR: Liepke Cornelia; Adermann Knut; Raida Manfred; Magert  
Hans-Jurgen; Forssmann Wolf-Georg; Zucht Hans-Dieter  
CORPORATE SOURCE: IPF Pharmaceuticals GmbH, Hannover, Germany..  
c.liepke@ipf-pharmaceuticals.de  
SOURCE: EUROPEAN JOURNAL OF BIOCHEMISTRY, (2002 Jan) 269 (2) 712-8.  
Journal code: 0107600. ISSN: 0014-2956.  
PUB. COUNTRY: Germany: Germany, Federal Republic of  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 200203  
ENTRY DATE: Entered STN: 20020222  
Last Updated on STN: 20020320  
Entered Medline: 20020319

AB The large intestine of breast-fed infants is colonized predominantly by  
bifidobacteria, which have a protective effect against acute diarrhea. In  
this study we report for the first time the identification of human milk  
\*\*\*peptides\*\*\* that selectively stimulate the growth of bifidobacteria.  
Several \*\*\*bifidogenic\*\*\* \*\*\*peptides\*\*\* were purified  
chromatographically from pepsin-treated human milk and identified as  
proteolytically generated fragments from the secretory component of the  
soluble polyimmunoglobulin receptor and lactoferrin; both of these  
proteins exhibit antimicrobial effects. Hydrolysis of the identified  
\*\*\*peptides\*\*\* with the gastrointestinal proteases pepsin, trypsin and  
chymotrypsin did not lead to the loss of \*\*\*bifidogenic\*\*\* activity,  
indicating their potential function in vivo. Sequential comparison  
revealed a similar structural motif within the identified \*\*\*peptides\*\*\*  
. A correspondingly designed small \*\*\*peptide\*\*\* (prebiotic  
lactoferrin-derived \*\*\*peptide\*\*\* -I, PRELP-I) was found to stimulate  
the growth of bifidobacteria as effectively as the native \*\*\*peptides\*\*\*  
. The combination of antimicrobial and bifidobacterial growth stimulatory  
activity in human milk proteins leads to highly specific compounds capable  
of regulating the microbial composition of infants' large intestine.

L3 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 2  
ACCESSION NUMBER: 1995:533685 CAPLUS  
DOCUMENT NUMBER: 122:313302  
TITLE: Growth promotion of Bifidobacterium animalis by bovine  
milk proteose-peptone

AUTHOR(S): Etienne, L.; Girardet, J. M.; Linden, G  
 CORPORATE SOURCE: Faculte des Sciences, Universite de Nancy I  
 Vandoeuvre-les-Nancy, 54506, Fr.  
 SOURCE: Lait (1994), 74(5), 313-23  
 CODEN: LAITAG; ISSN: 0023-7302  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The industrial strain Bifidobacterium animalis was used as assay organism to evaluate bifidobacterial growth-promoting activity of bovine milk proteose-peptone. This proved to be a better growth-promoting factor than bovine casein. The \*\*\*bifidogenic\*\*\* activity was found mainly in the proteose-peptone hydrophobic fraction contg. component 3, although the glycan moiety was a weak growth-promoter. Proteose-peptone digests by various proteolytic enzymes caused great enhancement of B animalis growth, particularly the Pronase digest. Size-exclusion chromatog. of digests showed that the more active \*\*\*peptides\*\*\* had a mol. mass distribution of 1000-5000 Da.

L3 ANSWER 3 OF 3 MEDLINE on STN  
 ACCESSION NUMBER: 89260007 MEDLINE  
 DOCUMENT NUMBER: 89260007 PubMed ID: 2657187  
 TITLE: [The bifidogenic effect of breast milk. Theories and facts].  
 Die bifidogene Wirkung der Muttermilch. Theorien und Fakten.  
 AUTHOR: Heine W  
 SOURCE: KINDERARZTLICHE PRAXIS, (1989 Mar) 57 (3) 109-16. Ref: 36  
 Journal code: 0376356. ISSN: 0023-1495.  
 PUB. COUNTRY: GERMANY, EAST: German Democratic Republic  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 General Review; (REVIEW)  
 (REVIEW, TUTORIAL)  
 LANGUAGE: German  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 198907  
 ENTRY DATE: Entered STN: 19900306  
 Last Updated on STN: 19900306  
 Entered Medline: 19890705

AB Human milk has the unique capability to originate and maintain a predominance of bifidobacteria in the large bowel of infants. There is evidence, that besides other protective factors this special microbiologic effect may have beneficial influences on the resistance against enteral infections as well as on a symbiotic utilization of some milk components. This is the reason, why there have been many attempts in past to imitate the \*\*\*bifidogenic\*\*\* effect in infant formulas. The different theories formed for the classification of this principle focus on either the low buffer capacity of mother's milk, the mutarotation of lactose and the existence of antimicrobial and bifidus growth factors, respectively. The \*\*\*bifidogenic\*\*\* principle is, however, in all probability not related to only one of these factors. It can rather be considered a complex of interacting factors, of which rapid gastric emptying due to the relatively high concentration of free amino acids and \*\*\*peptides\*\*\*, missing bacterial colonization of the small bowel, absence of antigenic effects of the food protein and low enterocyte regeneration may play an additional role. These aspects can be looked upon as a challenge for further research on mother's milk composition and on the metabolic effects of its constituents in future.

=> s bifidobacterium bifidum  
 L4 1957 BIFIDOBACTERIUM BIFIDUM

=> s 14 (p0 peptide  
 MISSING OPERATOR 'L22 (P0'  
 The search profile that was entered contains terms or nested terms that are not separated by a logical operator.

=> s 14 (p) peptide  
 L5 42 L4 (P) PEPTIDE

=> s e. coli  
 L6 318337 E. COLI

=> s 15 (p) 16  
 L7 8 L5 (P) L6

=> duplicate remove l7  
DUPLICATE IS NOT A RECOGNIZED COMMAND  
The previous command name entered was not recognized by the system.  
For a list of commands available to you in the current file, enter  
"HELP COMMANDS" at an arrow prompt (=>).

=> duplicate l7  
ENTER REMOVE, IDENTIFY, ONLY, OR (?):remove  
DUPLICATE PREFERENCE IS 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA'  
KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n  
PROCESSING COMPLETED FOR L7  
L8 2 DUPLICATE REMOVE L7 (6 DUPLICATES REMOVED)

=> d his

(FILE 'HOME' ENTERED AT 17:19:44 ON 09 AUG 2003)

FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT  
17:20:06 ON 09 AUG 2003

L1 317 S BIFIDOGENIC  
L2 8 S L1 (P) PEPTIDE  
L3 3 DUPLICATE REMOVE L2 (5 DUPLICATES REMOVED)  
L4 1957 S BIFIDOBACTERIUM BIFIDUM  
L5 42 S L4 (P) PEPTIDE  
L6 318337 S E. COLI  
L7 8 S L5 (P) L6  
L8 2 DUPLICATE REMOVE L7 (6 DUPLICATES REMOVED)

=> s l8 not l3  
L9 2 L8 NOT L3

=> d l9 1-2 ibib abs

L9 ANSWER 1 OF 2 MEDLINE on STN  
ACCESSION NUMBER: 93146928 MEDLINE  
DOCUMENT NUMBER: 93146928 PubMed ID: 1490908  
TITLE: Antibacterial spectrum of lactoferricin B, a potent  
bactericidal peptide derived from the N-terminal region of  
bovine lactoferrin.  
AUTHOR: Bellamy W; Takase M; Wakabayashi H; Kawase K; Tomita M  
CORPORATE SOURCE: Nutritional Science Laboratory, Morinaga Milk Industry Co.  
Ltd, Zama City, Japan.  
SOURCE: JOURNAL OF APPLIED BACTERIOLOGY, (1992 Dec) 73 (6) 472-9.  
Journal code: 7503050. ISSN: 0021-8847.  
PUB. COUNTRY: ENGLAND: United Kingdom  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199303  
ENTRY DATE: Entered STN: 19930312  
Last Updated on STN: 19930312  
Entered Medline: 19930304

AB A physiologically diverse range of Gram-positive and Gram-negative  
bacteria was found to be susceptible to inhibition and inactivation by  
lactoferricin B, a \*\*\*peptide\*\*\* produced by gastric pepsin digestion  
of bovine lactoferrin. The list of susceptible organisms includes  
Escherichia coli, Salmonella enteritidis, Klebsiella pneumoniae, Proteus  
vulgaris, Yersinia enterocolitica, Pseudomonas aeruginosa, Campylobacter  
jejuni, Staphylococcus aureus, Streptococcus mutans, Corynebacterium  
diphtheriae, Listeria monocytogenes and Clostridium perfringens.  
Concentrations of lactoferricin B required to cause complete inhibition of  
growth varied within the range of 0.3 to 150 micrograms/ml, depending on  
the strain and the culture medium used. The \*\*\*peptide\*\*\* showed  
activity against \*\*\*E\*\*\*. \*\*\*coli\*\*\* 0111 over the range of pH 5.5  
to 7.5 and was most effective under slightly alkaline conditions. Its  
antibacterial effectiveness was reduced in the presence of Na+, K+, Mg2+  
or Ca2+ ions, or in the presence of various buffer salts. Lactoferricin B  
was lethal, causing a rapid loss of colony-forming capability in most of  
the species tested. Pseudomonas fluorescens, Enterococcus faecalis and  
\*\*\*Bifidobacterium\*\*\* \*\*\*bifidum\*\*\* strains were highly resistant to  
this \*\*\*peptide\*\*\*.

L9 ANSWER 2 OF 2 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
ACCESSION NUMBER: 2002:8633 BIOSIS  
DOCUMENT NUMBER: PREV200200008633  
TITLE: Antibacterial activity associated with Lactobacillus  
gasseri ATCC 9857 from the human female genitourinary

tract.  
AUTHOR(S): Charteris, William P. (1); Kelly, Phillip M.; Mori, Lorenzo; Collins, J. Kevin  
CORPORATE SOURCE: (1) Group R and D Department, Glanbia Ingredients Ltd., Ballyragget, Kilkenny: bcharteris@glanbia.ie Ireland  
SOURCE: World Journal of Microbiology & Biotechnology, (August, 2001) Vol. 17, No. 6, pp. 615-625. print.  
ISSN: 0959-3993.

DOCUMENT TYPE: Article  
LANGUAGE: English

AB The 10-fold concentrated spent MRS culture cell-free supernatant concentrate ((cCFS)) of the human female genitourinary tract isolate *Lactobacillus gasseri* ATCC 9857 was shown to exhibit antibacterial activity towards gram-positive sporogenous and asporogenous fermentative eubacteria in liquid and on solid media under conditions that eliminated the activity of lactic acid (beta-glycerophosphate) and hydrogen peroxide (catalase). The antibacterial activity of the cCFS was characterized by automated turbidometry (Bioscreen™) and non-linear regression analysis (Gompertz model) using MRS broth cultures of the indicator strain *L. acidophilus* ATCC 11975. It exhibited a bactericidal mode of action, sensitivity to trypsin and proteinase K, partial sensitivity to pepsin and pronase E, partial heat stability at 121°C for 15 min, and retained significantly more activity following exposure to pH 3.0 and 5.0 compared with pH 7.2 and 9.0. The inhibitory spectrum included a wide range of *Lactobacillus* species, \*\*\**Bifidobacterium*\*\*\*, \*\*\**bifidum*\*\*\*, *B. infantis* and *B. catenulatum*, *Lactococcus cremoris*, *Leuconostoc cremoris*, *Pediococcus pentosaceus*, *Bacillus cereus*, *Clostridium tyrobutyricum*, *C. pasteurianum*, *C. sporogenes*, *Staphylococcus carnosus*, and *Enterococcus faecalis*. Although partial inhibition of *Escherichia coli* ATCC 25922 by cCFS was observed in liquid medium, inhibition of freshly isolated human uropathogenic \*\*\**E. coli*\*\*\* strains could not be demonstrated on TSB agar plates by agar well diffusion. Following partial resolution by gel permeation FPLC on Superose-12, the fractionated cCFS was shown to comprise at least two inhibitory \*\*\*peptides\*\*\* (3.05 and 5.27 kDa) as well as aggregated inhibitory \*\*\*peptide\*\*\* material (21.65, 41.50, 81.20, and 120.90 kDa). The 3.05 kDa \*\*\*peptide\*\*\*, designated Gassericin D, inhibited *L. acidophilus* strains ATCC 11975 and ACA-DC 241. The 5.27 kDa \*\*\*peptide\*\*\*, designated Gassericin C, inhibited *L. gasseri* strain UCSC LF221snb and *En. faecalis* DPC 3319. The aggregated 21.65 kDa \*\*\*peptide\*\*\* material strongly inhibited *L. acidophilus* ATCC 11975 and weakly inhibited *Listeria innocua* DPC 3306. The aggregated 41.50 kDa \*\*\*peptide\*\*\* material strongly inhibited *Ba. cereus* DPC 3316 and weakly inhibited *L. acidophilus* ACA-DC 241. The ability of *L. gasseri* ATCC 9857 to produce bacteriocin-like activity may be of importance in the biopreservation of nutraceuticals and in the management of female genitourinary and gastrointestinal tract infections involving *En. faecalis*.

=> s milk (p) peptide  
L10 7427 MILK (P) PEPTIDE

=> d his  
(FILE 'HOME' ENTERED AT 17:19:44 ON 09 AUG 2003)

FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT 17:20:06 ON 09 AUG 2003

L1 317 S BIFIDOGENIC  
L2 8 S L1 (P) PEPTIDE  
L3 3 DUPLICATE REMOVE L2 (5 DUPLICATES REMOVED)  
L4 1957 S BIFIDOBACTERIUM BIFIDUM  
L5 42 S L4 (P) PEPTIDE  
L6 318337 S E. COLI  
L7 8 S L5 (P) L6  
L8 2 DUPLICATE REMOVE L7 (6 DUPLICATES REMOVED)  
L9 2 S L8 NOT L3  
L10 7427 S MILK (P) PEPTIDE

=> s l10 (p) l1  
L11 8 L10 (P) L1

=> duplicate remove l11  
DUPLICATE PREFERENCE IS 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH'  
KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n  
PROCESSING COMPLETED FOR L11  
L12 3 DUPLICATE REMOVE L11 (5 DUPLICATES REMOVED)

=> s l12 not (l3 or l9)  
l13 0 l12 NOT (L3 OR L9)

=> d his

(FILE 'HOME' ENTERED AT 17:19:44 ON 09 AUG 2003)

FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT  
17:20:06 ON 09 AUG 2003

l1 317 S BIFIDOGENIC  
l2 8 S l1 (P) PEPTIDE  
l3 3 DUPLICATE REMOVE l2 (5 DUPLICATES REMOVED)  
l4 1957 S BIFIDOBACTERIUM BIFIDUM  
l5 42 S l4 (P) PEPTIDE  
l6 318337 S E. COLI  
l7 8 S l5 (P) l6  
l8 2 DUPLICATE REMOVE l7 (6 DUPLICATES REMOVED)  
l9 2 S l8 NOT l3  
l10 7427 S MILK (P) PEPTIDE  
l11 8 S l10 (P) l1  
l12 3 DUPLICATE REMOVE l11 (5 DUPLICATES REMOVED)  
l13 0 S l12 NOT (L3 OR L9)

=> log y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

25.82

26.03

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-0.65

-0.65

STN INTERNATIONAL LOGOFF AT 17:25:02 ON 09 AUG 2003